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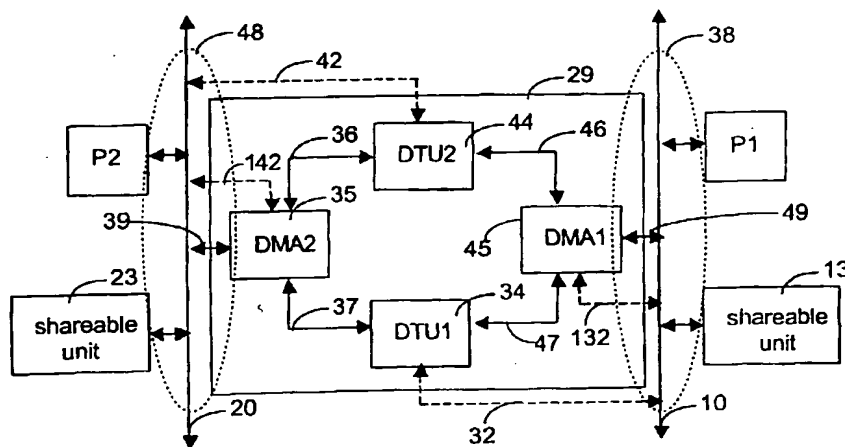
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(54) Title: IMPROVED INTER-PROCESSOR COMMUNICATION SYSTEM FOR COMMUNICATION BETWEEN PROCESSORS



(57) Abstract: System comprising at least two integrated processors (P1 and P2). These two processors (P1 and P2) are operably connected via two bi-directional communication channels for exchanging information. For establishing the bi-directional communication channels, the system comprises a first processor bus (10) to which the first processor (P1) is connected, a first direct memory access unit (45), a first programmable unit (34), and a first shareable unit (13). The programmable unit (34) can be programmed by the first processor (P1). Also comprised is a second processor bus (20), the second processor (P2) being connectable to the second processor bus (20), a second direct memory access unit (35), and a second programmable unit (44). Said second programmable unit (44) is programmable by the second processor (P2).

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INTERNATIONAL SEARCH REPORT

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002/055979 A1 (KOCH STEFAN ET AL) 9 May 2002 (2002-05-09) the whole document	1-11
Y	US 5 644 729 A (BOURY BECHARA FOUAD ET AL) 1 July 1997 (1997-07-01) the whole document	1-11
A	US 5 335 326 A (APOSTOL GEORGE ET AL) 2 August 1994 (1994-08-02) the whole document	1-11
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>H. HELLWAGNER, W. KARL, M. LEBERECHT: "Fast communication mechanisms - Coupling hardware distributed shared memory and user-level messaging""Online! 1997, XP002314569 INSTITUT FÜR INFORMATIK DER TECHNISCHEN UNIVERSITÄT MÜNCHEN Retrieved from the Internet: URL:http://citeseer.ist.psu.edu/hellwagner97fast.html> 'retrieved on 2005-01-19! the whole document</p> <p>-----</p>	1-4

INTERNATIONAL SEARCH REPORT

IB 03/02813

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 2002055979	A1	09-05-2002	CN	1394310 T	29-01-2003
			WO	0221290 A1	14-03-2002
			EP	1317712 A1	11-06-2003
			JP	2004508635 T	18-03-2004
US 5644729	A	01-07-1997	AU	663537 B2	12-10-1995
			AU	2979392 A	08-07-1993
			BR	9205015 A	06-07-1993
			CA	2080210 A1	03-07-1993
			CN	1074052 A ,B	07-07-1993
			EP	0550241 A1	07-07-1993
			JP	5242010 A	21-09-1993
			KR	9700274 B1	08-01-1997
			NZ	245347 A	26-09-1995
			SG	44446 A1	19-12-1997
US 5335326	A	02-08-1994	NONE		